



STATEMENT OF BASIS
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BAQ Air Permitting Division

Company Name:	Kimberly-Clark Corporation	Permit Writer:	Kathleen T. Haddock, PE
Permit Number:	0080-0009-DP	Date:	DRAFT

EXPEDITED REVIEW: Accepted May 2, 2018

DATE APPLICATION RECEIVED: April 12, 2018

FACILITY DESCRIPTION: Kimberly-Clark Corporation owns and operates tissue manufacturing/converting equipment and infant care disposable diaper manufacturing/converting equipment. The facility also produces paper products for personal hygiene, including wet wipes, toilet tissue, and facial tissue.

The facility is a PSD major source subject to the 100 TPY threshold. Although tissue mills are not one of the source categories subject to the 100 TPY threshold, the facility operates two fossil fuel-fired boilers with a total rated heat input capacity exceeding 250 MMBtu/hr, which is a 100 TPY threshold source category.

PROJECT DESCRIPTION: The facility has submitted an expedited construction permit application requesting modifications to Emission Unit ID 04 - Diaper Line & Related Processes. The facility is proposing to replace existing personal care lines B-13, B-15, and B-16 with three new modular personal care lines. The replacement equipment will allow for easier basic maintenance procedures due to the modular design. There will be no change in maximum production rates for the three lines. The current control devices for the B-13 line (CD-B-13A and 13B) will be replaced with a new baghouse (CD-B-13). Lines B-15 and B-16 will continue to use the existing combined control device (CD-B-15/16).

In addition to the equipment replacement, the facility is also requesting the installation of three new personal care lines, to be designated B-21, B-22, and B-23. Particulate matter (PM) emissions from each line will be controlled by a two (2) baghouse control system. One baghouse will vent externally to control filterable PM from one section of the line and the other baghouse will vent internally to control emissions from the end section of the line.

Additional controls for the new lines will include an existing vacuum system to collect exhaust air. Internally vented emissions from the new lines will be routed to the existing dust collection system (MR-CV1) which further routes to six existing dust collectors (CD-TW1 through TW6), for employee safety. The replacement lines will also be vented to the existing vacuum system, as were the original lines.

The facility will be increasing actual steam production from the existing boilers to support the new equipment. There will be no physical modifications to the boilers.

This modification includes the removal of Line B-8 and the associated control equipment (CD-B-08A and -08B). An existing building will be expanded to accommodate the new equipment, altering the roof structure.

Modeling was submitted for update to account for the increases in emissions and building dimensions.

Synthetic minor limits of less than 10 TPY for PM_{2.5} for the existing lines (to include the replacement lines B-13, B-15, and B-16) will be established through this permit. There are currently federally enforceable limits of less than 25 TPY for PM and less than 15 TPY for PM₁₀ established in the Title V permit for these existing Diaper/Personal Care Lines. Separate synthetic minor limit of less than 25 TPY for PM, less than 15 TPY for PM₁₀, and less than 10 TPY for PM_{2.5} will be established for B-21, B-22, and B-23.



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As the facility is a major source for PSD, the emissions increases related to the project were evaluated. The facility made the following assumptions for determining potential PSD applicability:

1. Replacement/Modified Lines B-13, B-15, and B-16: Baseline actual emissions are conservatively assumed to be zero. Potential emissions of PM (filterable), PM₁₀, and PM_{2.5} were estimated from historical stack test data from the existing lines. Volatile organic compound (VOC) emissions were estimated based on potential process chemical usage, assuming 100% volatilization. As B-13 is being completely replaced (unit and control device), projected actual emissions are the uncontrolled potential to emit for the unit, calculated at 8,760 hours per year. Projected Actual Emissions from Lines B-15 and B-16 are the controlled emissions as the control devices were previously established in the Title V operating permit and are federally enforceable.
2. Associated Units: An increase in steam from the existing boilers (B-1 and B-2) will be required for the new HVAC units for the new lines. To estimate increased steam demand, historical boiler data were analyzed to determine the extra heat input required for the project. No modifications will be made to the boilers as capacity is available for the increase in steam demand. As the boilers are permitted to burn various fuels, worse-case emission factors were used for each pollutant to determine highest potential emissions.
3. Modified Units: Additional exhaust from the three new lines will vent to the existing Central Vacuum System 1 resulting in an increase in PM emissions from this unit. Site-specific engineering assumptions have been used previously to develop the emission factors for the vacuum system. Baseline actual emissions were assumed to be zero. Note that the replacement units will also vent to the Central Vacuum System, as did the original units.
4. New Units: Baseline emissions are zero for the new units and projected actual emissions are the uncontrolled potential emissions for each unit. Emission factors for PM/PM₁₀/PM_{2.5} are based on historical stack testing of similar units. VOC emissions are estimated using potential process chemical usage.
5. Projected Actual Emissions are the potential emissions calculated at 8,760 hours per year.

DISCUSSION

A meeting was held on April 19, 2018 with the facility and consultants. The purpose of the meeting was to discuss the initial non-acceptance of the expedited application. Synthetic minor limits of PM, PM₁₀, and PM_{2.5} for the new lines had not been included in the application and the application was originally submitted requesting a state minor construction permit. The facility also provided modeled emission rate information that differed from Department records from previous applications for processes that are not changing.

It was agreed upon that separate synthetic minor limits for PM, PM₁₀, and PM_{2.5} would be established for the new lines (B-21, B-22, and B-23).

An additional concern was how to address the increase from the Central Vacuum System, as this equipment falls under the previously synthetic minor PM/PM₁₀ limits and the new lines will vent to it. The Department made the determination that the increase resulting from the new units would continue to be limited by the previously established synthetic minor limits for PM and PM₁₀, and the PM_{2.5} limit that will be established for the existing equipment through this permit action.

SOURCE TEST REQUIREMENTS: The facility is a potential major source of particulate matter emissions as defined under Standard No. 7. The facility has established synthetic minor particulate matter limits for the existing and



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replacement lines and has requested separate synthetic minor limits for the new equipment (B-21, B-22, and B-23) of less than 25 TPY for PM, less than 15 TPY for PM₁₀, and less than 10 TPY for PM_{2.5}. The facility is currently required to source test two of the lines (B-10, B-11, B-12, B-13, B-14, B-15, B-16, B-17, B-18, B-19, and B-20) once a year. Because lines B-15 and B-16 share a control device, as do lines B-17 and B-18, and B-19 and B-20, these lines shall be tested together. This testing rotation will not be changed with the replacement of B-13, B-15, and B-16, resulting in two (2) line being tested at least once every six (6) years.

An initial source test for PM, PM₁₀, and PM_{2.5} shall be required for line B-13 within 180 days of start-up due to the replacement of the control device.

An initial source test for PM, PM₁₀, and PM_{2.5} shall be required for lines B-21, B-22, and B-23 within 180 days of start-up.

Table 1: FACILITY WIDE EMISSIONS

Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
PM	1,065	115
PM ₁₀	852	79
PM _{2.5}	598	59
SO ₂	15	15
NO _x	291	291
CO	304	304
VOC	234	234
Lead	0.0437	0.0437
Phosphoric Acid (Highest HAP)	7.55	7.55
Total HAP	<25	<25



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Table 2: Actual to Projected Actual Emissions Comparison -TPY

Projected Actual Emissions									
Source	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	Pb	CO _{2e}
B-13 (1)	12.54	12.54	0.39	--	--	--	10.24	--	--
B-15 (2)	7.36E-03	7.36E-03	7.36E-03	--	--	--		--	--
B-16 (2)	7.36E-03	7.36E-03	7.36E-03	--	--	--		--	--
B-21	45.83	45.83	32.51	--	--	--	20.40	--	--
B-22	45.83	45.83	32.51	--	--	--		--	--
B-23	45.83	45.83	32.51	--	--	--		--	--
MR-CV1(3)	0.55	0.55	0.55	--	--	--	--	--	--
B-1, B-2	0.50	0.573	0.448	0.553	5.95	2.82	0.189	2.07E-03	5,629
PROJECTED ACTUAL EMISSIONS - TOTAL									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	Pb	CO _{2e}
	151	151	139	0.553	5.95	2.82	30.8	2.07E-03	5,629
BASELINE ACTUAL EMISSIONS 2014-2015									
Source	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	Pb	CO _{2e}
(4)	0	0	0	0	0	0	0	0	0
BASELINE ACTUAL EMISSIONS - TOTAL									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	Pb	CO _{2e}
	0	0	0	0	0	0	0	0	0
NET = TOTAL PROJECTED ACTUAL EMISSIONS - TOTAL BASELINE ACTUAL EMISSIONS									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	Pb	CO _{2e}
	151	151	139	0.553	5.95	2.82	30.8	2.07E-03	5,629
SER	25	15	10	40	40	100	40	0.6	75,000
Exceeds?	Yes	Yes	Yes	No	No	No	No	No	No
% SER	--	--	--	1.38%	14.9%	2.82%	77%	0.35%	7.5%
Recordkeeping?	--	--	--	No	No	No	No (4)	No	No

(1) Projected actual emissions for B-13 are uncontrolled as the control device for this unit is also being replaced.



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- (2) Although the units are being replaced, projected actual emissions for B-15 and B-16 are controlled as the control devices for these units were previously permitted and are federally enforceable.
- (3) Emissions routed to the Central Vacuum are controlled as this is an existing piece of equipment.
- (4) The facility conservatively assumed baseline emissions to be zero. Although the net emissions increase for VOC exceeds 50% of the SER, recordkeeping, in accordance with the Reasonable Possibility in Recordkeeping, is not required. The rule is applied when the difference between the projects baseline actual emission and the sum of the projected actual emissions and emissions from, e.g., demand growth exceed 50% of the SER. Because the facility relied on potential emissions in lieu of projected actual emissions, recordkeeping is not required in accordance with SC Regulation 61-62.5, Standard No. 7 (b)(41)(ii)(d) – definition of “Projected Actual Emissions” and (r)(6) – “Source Obligation: Monitoring, Recordkeeping, and Reporting”.

CONCLUSION: Although the net emissions of PM, PM₁₀, and PM_{2.5} exceed the SER for the respective limits, the facility will control the emissions from the affected sources, with the exception of the boilers, using baghouses. B-13, B-15, B-16, and MR-CV1 will remain under the previously established limits of less than 25 TPY for PM, less than 15 TPY for PM₁₀. The facility has requested a less than 10 TPY limit for PM_{2.5} for the units subject to the PM and PM₁₀ limits previously established. Separate synthetic minor limits of less than 25 TPY for PM, less than 15 TPY for PM₁₀, and less than 10 TPY for PM_{2.5} will be established through this permit for the new units, B-21, B-22, and B-23.



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OPERATING PERMIT STATUS

This facility operates under Title V Operating Permit issued on July 9, 2013 with an effective date of October 1, 2013 and an expiration date of September 30, 2018. The facility submitted an application for renewal on February 28, 2018 in accordance with SC Regulation 61-62.70.5(a)(1)(iii).

PROJECT REGULATORY APPLICABILITY REVIEW	
Regulations	Comments/Periodic Monitoring Requirements
Section II.E – Synthetic Minor	Applicable: The facility is a major source for PSD. Due to the operation of fossil fuel-burning equipment with a total rated heat input exceeding 250 MMBtu/hr, the major source threshold for the facility is 100 TPY. As the emissions of PM, PM ₁₀ , and PM _{2.5} exceed the respective SER, the facility has requested synthetic minor limits for these pollutants and will use control devices to demonstrate compliance.
Standard No. 1	Not Applicable: The facility operates 2 boilers and a hot water heater. Although there will be a steam usage increase resulting from the construction and replacement, there will be no modification to the boilers and the conditions established in the Title V permit apply. The hot water heater is not affected by this project.
Standard No. 3 (state only)	Not Applicable: The boiler is permitted to burn landfill gas, but the facility was granted an exemption from the standard under construction permit 0080-0090-DH, in accordance with Section I(J)(2).
Standard No. 4	Applicable: The particulate matter limit based on process weight rate and a visible emissions limit of 20% opacity applies to the new and replacement units. The facility is required to perform a visual inspection on a weekly basis. Pressure drop gauges are required on the baghouses and pressure drop readings shall be recorded weekly during source operation. The facility will be required to conduct initial source testing for particulate matter on the baghouses controlling the Personal Care Line equipment.
Standard No. 5	Not Applicable: Although the facility was in existence before July 1, 1979 and has the potential to emit VOCs above the applicability threshold for the standard, none of the facility's processes fall into any of the process categories described in Section II of this standard.
Standard No. 5.2	Applicable: Boilers B-1 and B-2 are subject to the requirements of the standard. The conditions are contained in the Title V operating permit. There will be no modifications to the boiler and no additional requirements under the standard.
Standard No. 7	Applicable: The facility is a major source for PSD. Due to the operation of fossil fuel-burning equipment with a total rated heat input exceeding 250 MMBtu/hr, the major source threshold for the facility is 100 TPY. This facility has requested synthetic minor particulate matter limits for the new equipment to be installed under this construction permit and to roll the replacement equipment under the previously established synthetic minor particulate matter limits and to establish a PM _{2.5} limit for the existing and



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PROJECT REGULATORY APPLICABILITY REVIEW	
Regulations	Comments/Periodic Monitoring Requirements
	replacement equipment. The facility will operate baghouses/dust collectors to stay below the limits and will be required to monitor operating parameters and maintain records for compliance.
61-62.6	Applicable: The facility shall comply with Section III "Control of Fugitive Particulate Matter Statewide", as established in condition 4.6 of the current Title V operating permit.
40 CFR 60 and 61-62.60	Not Applicable: There are no NSPS applicable to the modified or new units.
40 CFR 61 and 61-62.61	Not Applicable: None of the subparts are applicable to the facility.
40 CFR 63 and 61-62.63	The facility is an area source for HAP. There are no area source categories for the existing or new personal care lines. Boiler No. 1 (B-1) is not subject to Subpart JJJJJ - Industrial, Commercial, And Institutional Boilers Area Sources in accordance with §63.11195(e) as the unit burns only gaseous fuel (natural gas and landfill gas). Boiler No. 2 (B-2) is subject to the requirements of the subpart in accordance with §63.11194(a)(1) as it is an existing source that is permitted to burn natural gas and No. 2 fuel oil. The requirements for Boiler No. 2 were previously established in the Title V operating permit. The boilers were not modified to accommodate the increase in steam usage from the units and the applicable requirements are not affected.
61-62.68	Not Applicable: The facility does not store or use any chemicals subject to 112(r) above threshold quantities.
40 CFR 64 (CAM)	Not Applicable: Both the modified and new lines have control devices for emissions of PM/PM ₁₀ /PM _{2.5} . Pre-controlled and controlled emissions for each personal care line are less than the 100 TPY major source threshold. In accordance with §64.2(a)(3), CAM is not applicable.

AMBIENT AIR STANDARDS REVIEW	
Regulations	Comments/Periodic Monitoring Requirements
Standard No. 2	Applicable: See modeling summary dated May 8, 2018. All previously modeled pollutants were re-modeled.
Standard No. 7.c	Not Applicable
Standard No. 8 (state only)	Applicable: See modeling summary dated May 8, 2018.

PUBLIC NOTICE

This construction permit(s) will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II.N and SC Regulation 61-62.5, Standard 7(q). The comment period was open from June 7, 2018 to July 6, 2018 and was placed on the BAQ website during that time period.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.